WHAT IS CLAIMED IS:

1. A micromachined capacitive lateral accelerometer device having an input axis, the device comprising:

at least one electrode having a side surface normal to the input axis; and

a relatively large proofmass having at least one side surface normal to the input axis and which extends along a width of the proofmass and which is movable against acceleration relative to the at least one electrode due to inertial force along the input axis to obtain a capacitive variation between the at least one electrode and the proofmass and wherein the side surfaces are spaced apart to define a narrow, high-aspect ratio sensing gap which extends along substantially the entire width of the proofmass and wherein the proofmass forms a sense capacitor with the at least one electrode.

2. The device as claimed in claim 1, wherein the device is operable at atmospheric pressure.

3. The device as claimed in claim 1, wherein the proofmass is formed from a single wafer having a predetermined thickness and wherein thickness of the proofmass is substantially equal to the predetermined thickness.

4. The device as claimed in claim 3, wherein the thickness of the proofmass is about 500 microns.

5. The device as claimed in claim 1, further comprising a support structure to fixedly support the at least one electrode at opposite ends thereof and wherein the at least one electrode spans the entire width of the proofmass.

6. The device as claimed in claim 1, wherein the device comprises a plurality of electrodes and wherein each of the electrodes has a side surface normal to the input axis and wherein the proofmass has a plurality of side surfaces normal to the input axis which extend the width of the proofmass.

7. The device as claimed in claim 6, wherein the electrodes include differential capacitive electrode pairs.

8. The device as claimed in claim 1, wherein a ratio of the sensing gap to a height of the at least one electrode is relatively large to provide a high-sensitivity device.

9. The device as claimed in claim 8, wherein the ratio is about 70 or greater.

10. The device as claimed in claim 9, wherein the sensing gap is about 1 micron.

11. The device as claimed in claim 10, wherein the height of the at least one electrode is greater than about 70 microns.

12. The device as claimed in claim 1, further comprising a support structure to fixedly support the at least one electrode at opposite ends thereof and moveably support the proofmass.

13. The device as claimed in claim 12, wherein the support structure includes an outer peripheral support rim and high-aspect ratio support springs for suspending the proofmass from the support rim.

14. The device as claimed in claim 13, wherein the support springs are polysilicon support springs.

15. The device as claimed in claim 1, wherein the sensing gap is substantially uniform.

16. The device as claimed in claim 1, wherein the sensing gap is substantially non-uniform.

17. The device as claimed in claim 16, wherein the at least one electrode is corrugated.

18. The device as claimed in claim 1, wherein the device has top and bottom sides which are mirror images of each other.

19. The device as claimed in claim 1, wherein the at least one electrode is made of polysilicon.

20. The device as claimed in claim 1, wherein the device further comprises a second electrode and at least one stiffener interconnecting the first and second electrodes for stiffening the electrodes.

21. The device as claimed in claim 1, wherein the at least one electrode and a first side of the proofmass which forms the side surface of the proofmass define elongated rectangular plates.

22. The device as claimed in claim 21, wherein the plates are substantially parallel.

23. The device as claimed in claim 1, wherein the device is formed from a single semiconductor wafer.

24. The device as claimed in claim 23, wherein the semiconductor wafer is a silicon wafer.

25. The device as claimed in claim 1, wherein the at least one electrode is surface micromachined.

26. The device as claimed in claim 1, wherein the proofmass is bulk micromachined.

27. The device as claimed in claim 24, wherein the proofmass is a boron-doped silicon proofmass.

28. A monolithic, three-axis accelerometer comprising three individual single-axis accelerometers wherein at least one of the individual accelerometers is a micromachined capacitive lateral accelerometer device having an input axis, the device comprising:

at least one electrode having a side surface normal to the input axis; and

a relatively large proofmass having at least one side surface normal to the input axis and which extends along a width of the proofmass and which is movable against acceleration relative to the at least one electrode due to inertial force along the input axis to obtain a capacitive variation between the at least one electrode and the proofmass and wherein the side surfaces are spaced apart to define a narrow, high-aspect ratio sensing gap which extends along substantially the entire width of the proofmass and wherein the proofmass forms a sense capacitor with the at least one electrode.

29. The three-axis accelerometer of claim 28, wherein two of the individual accelerometers are in-plane accelerometers and one of the individual accelerometers is an out-of-plane accelerometer.

30. The three-axis accelerometer of claim 28, wherein each of the individual accelerometers is a micromachined capacitive accelerometer device.

31. The three-axis accelerometer of claim 28, wherein each of the individual accelerometers has a full-wafer thick semiconductor proofmass.

32. The three-axis accelerometer of claim 28, further comprising a single substrate on which the three individual single-axis accelerometers are integrated.

33. The three-axis accelerometer of claim 28, wherein the three individual single-axis accelerometers are formed from a single chip.